3.4 An All-Hazards Approach is Needed to Support Building Movement Strategies

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People face a variety of hazards in built environments. The emergency management field has developed various approaches applicable to building emergencies, and the "all-hazards" or "multi-hazards" approach is among the most potentially valuable. At all levels of government, from the Federal Emergency Management Agency to local governments, officials recognize that the same basic functions must be activated in response to any and all hazardous events. Unfortunately, at the level of building management, this is not typically the case. Even with its great concentration of large buildings, many New York City building owners and managers employ both fire safety and security directors who may not work well together during emergencies despite their interdependence on achieving favorable outcomes. Different people may organize an evacuation in response to a fire and a bomb threat. The current situation inhibits efficient and effective engineering mitigation and responses to building emergencies.

To facilitate an interdisciplinary cooperative deployment of emergency strategies, we need to develop a common terminology and taxonomy of strategies that researchers, systems designers, officials, and practitioners can use regardless of their backgrounds and the hazards with which they are concerned.

There are only a few basic "people movement" strategies that must be used regardless of the type of emergencies, so developing common terms and classifications is not difficult in principle. Despite a myriad of terms, people movement strategies are invariably combinations of only three basic approaches:

- Keep people where they are
- Relocate people into another part of the building
- Evacuate people from the building

At present, there seems to be scant attention to standardizing an approach that cuts across responses to all hazards. The current state of theory about designing and using movement strategies is fragmented because it has been generated by people with different backgrounds concerned about different hazards. An example illustrates the problem. The use of some sort of protected building space is a common strategy used in response to a variety of hazards. The duration that people must remain in relatively protected spaces depends on the nature of the hazard and how the particular scenario plays out, but the fundamental strategy still applies—people wait inside of a space in the building where they are relatively protected from the hazard. The variety of terms labeling this fundamental approach reflects the problem: Remain-, protect-, shelter- and defend-in-place, refuge area, area of evacuation assistance, safe rooms, and lockdowns all refer to this fundamental strategy.

- The fire safety community advocates this strategy in building occupancies where people cannot be quickly evacuated, either because of vertical travel distances (e.g., high rise buildings) or occupants are unable to evacuate without assistance (e.g., heath care facilities).
- The public health community advocates this strategy in response to exterior releases of airborne biological, chemical and radiological contaminants.
- The disaster community discusses the use of building spaces for protecting occupants from severe weather such as hurricanes and tornadoes.
- The security community advocates this strategy in response to armed and dangerous persons who are somewhat remote to their potential victims.

The engineering means for protecting spaces differ radically depending on the hazard, but the same basic approach of keeping people at or relocating them to protected spaces applies.

Developing a common all-hazards jargon and taxonomy is not technically demanding, but is a difficult managerial task. An organization is needed to champion an overarching approach intended to provide a coherent and systematic approach towards research and development of building protection strategies, much in the manner that FEMA champions the all hazard approach towards community emergency planning. The National Institute of Standards and Technology seems to be in an advantageous position to undertake this task. Identifying the various disciplines working on this problem is a logical place to start. A good beginning might be a follow-up workshop where representatives from various disciplines can meet to describe their various approaches, identify where their approaches are compatible and where they diverge, and learn each others jargon. Ideally, the workshop would yield an action plan for achieving a standardized terminology and taxonomy of occupant protection strategies.